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Practical Pharmacy Edition

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Editorial

DANGEROUS DRUGS AGAIN

THIS Journal and many other pharmaceutical publications during the past two years have carried informative articles on the subject of "dangerous drugs," by which is meant those drugs which the Federal Food and Drugs Administration believes are unsafe for self-medication and which, therefore, should be dispensed only on the prescription of a physician, dentist or veterinarian. Such drugs include the sulfonamides, benzedrine for internal use, thyroid, aminopyrine, the barbiturates, and others.

Although the compliance of pharmacists with the Federal Food, Drug and Cosmetic Law and its regulations covering this class of drugs has been very good, there are still some members of the profession who continue to sell these dangerous products over-the-counter.

In his recent report to Administrator Paul V. McNutt, of the Federal Security Agency, Commissioner W. G. Campbell, of the Food and Drug Administration, states: "In order to determine whether or not druggists are complying with the restrictions, inspectors, as ordinary customers, attempt to purchase these dangerous drugs 'over-the-counter.' In the large majority of instances druggists have refused to sell these items otherwise than on prescription. In comparatively few instances the drugs have been sold. Heretofore it has been the policy of the Administration to address letters to druggists who have made such sales, on the supposition that they are not familiar with their responsibilities. Through these letters, by publicity in the trade press, and particularly through the activities of State Boards of Pharmacy and other state and city officials, druggists have now generally been informed of the requirements of the law. It may reasonably be assumed that future violations, if any, are deliberate."

It must be admitted that the Food and Drug Administration has been most reasonable in the length of time it has allowed for pharmacists to become familiar with the provisions of the law and its regulations. Now, apparently, the period of warning is past and prosecutions will begin against those who persist in selling benzedrine tablets, thyroid pills and other dangerous drugs over-the-counter.

All pharmacists are, or should be, familiar with the list of these dangerous drugs which has been quite widely published. There is a second phase of this problem, however, that many pharmacists may be overlooking. Certain products which, in the past, have been sold over-the-counter, now reach the pharmacist with labels bearing the phrase "to be used only by or on the prescription of a physician." These products are not dangerous drugs within the meaning of the law, and they could be sold over-the-counter if their labels bore adequate directions for use and other information which is required. Their manufacturers, however, apparently make use of the "prescription legend" exemption to relieve themselves of the responsibility of properly labeling the products.

These products, although not in the dangerous drug class, nevertheless cannot be sold over-the-counter unless the pharmacist who sells them labels them with such directions and warnings as are required by the Federal Law, and assumes the responsibility for such labeling. Since quantitative for-

mula disclosure is not required by the law, pharmacists are hardly in a position to supply such labeling information concerning products of unknown composition.

But the pharmacist, not the manufacturer, is responsible if these products are sold over-the-counter. Make sure that every product you sell over-the-counter is adequately labeled in conformity with the law. Make it a practice to watch the labels of all products, regardless of how many years you have been selling them. There are a number of pharmacists who are violating the law today without realizing it.

HAVE YOU SENT YOUR QUININE IN?

ALTHOUGH the response of pharmacists to the Government's appeal for quinine has been excellent, we still have a long way to go before we can come anywhere near meeting the Army's and the Navy's need for supplies of this antimalarial drug. To maintain our present military operations in malarial areas of the South Pacific requires a tremendous quantity of both quinine and Atabrine, and the coming of spring in North Africa will make malaria a real threat to our troops in that region.

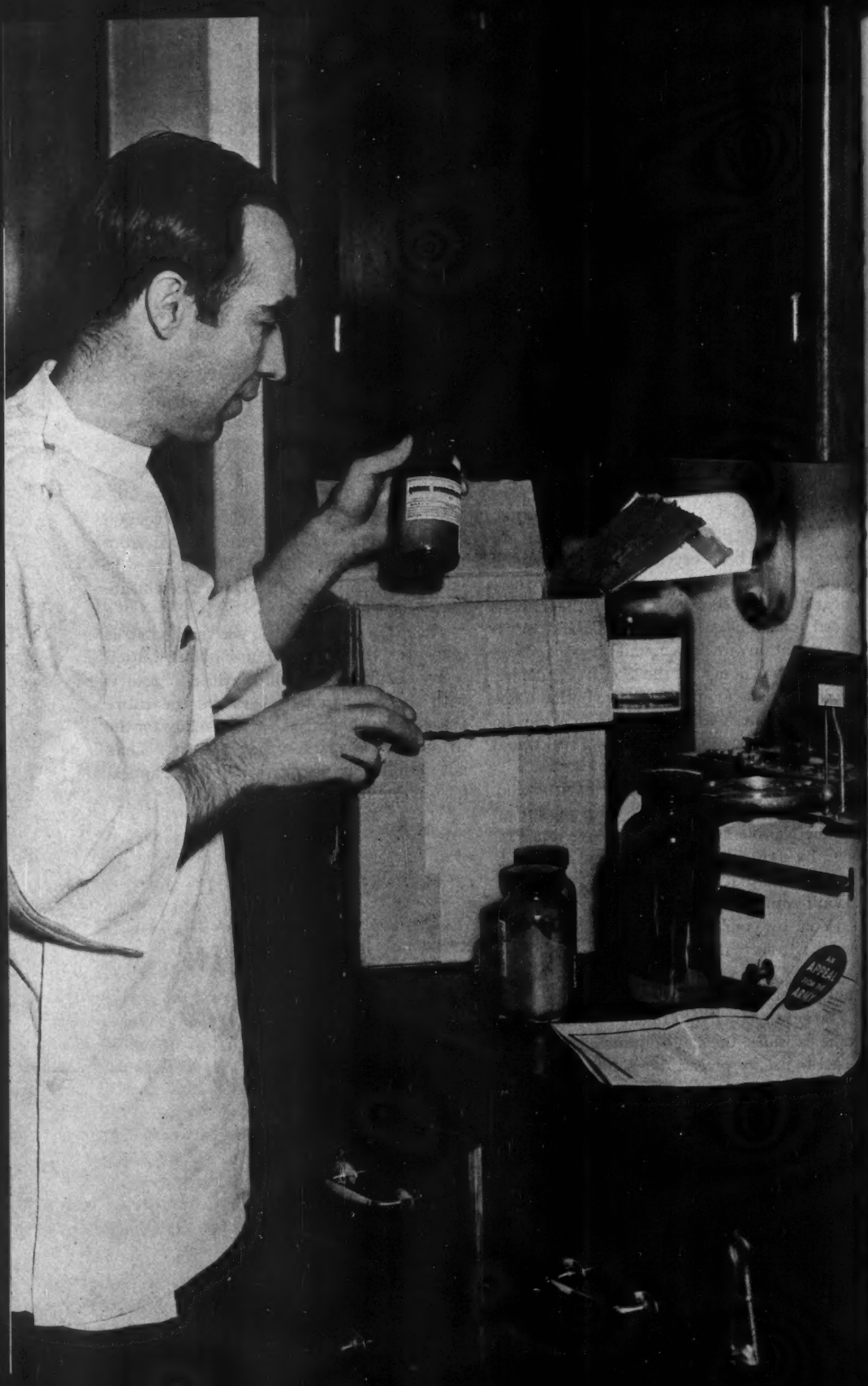
If you are one of the pharmacists who, although intending to send your quinine off to the National Quinine Pool, have put if off day by day, won't you take time to pack it up and ship it now, before it's too late? Don't wait until tomorrow or next week.

You, by your contribution, can protect a soldier from malaria for a week, a month or a year. You can help keep him in his fox hole or in his tank instead of in a hospital.

So get together your opened bottles of quinine capsules, the can of quinine sulfate you used to use for prescriptions, and the several odd containers of cinchonine and cinchonidine salts you have on the shelf—seal the bottles with tape, pack them securely in a box or carton, and send them to the National Quinine Pool, 2215 Constitution Ave., N. W., Washington, D. C.

Whether or not you enclose the coupon from the 6-page folder you received from WPB, your contribution will be recorded in your name, and you will receive a certificate in acknowledgment.

This is a fast-moving war and time is precious. Send in your quinine contribution today so that there will be time to pool it with that sent in by others and the entire amount can be reprocessed and ready for the Army and Navy when they need it. Let's not permit pharmacy's answer to the appeal for quinine be "too little too late."



PHARMACISTS ANSWERING *Call for Quinine*

CONTRIBUTIONS OF CINCHONA DERIVATIVES POURING INTO NATIONAL QUININE POOL FROM EVERY STATE, BUT MUCH MORE IS NEEDED. HAVE YOU SENT YOUR QUININE OFF TO WAR?

WHEN the Japs seized the cinchona plantations of the Dutch East Indies and counted on malaria to help them win this war, they didn't anticipate that the pharmacists of the United States would upset their plans. Although pharmacists can't go out in a body and wrest Java and the other islands from the grasp of our enemies, they *can* do the next best thing—supply the Army and the Navy with the quinine which made the Indies of strategic value. And that is just what they are doing.

In response to the appeal of the Armed Forces, the pharmacists of the country are flooding the National Quinine Pool with thousands of ounces of cinchona derivatives. From every state in the Union hundreds of packages of pills, capsules and powder are pouring in daily. The Washington Post Office has had to make four and five special deliveries daily with mail trucks piled to the door with packages. The special staff which had been organized to receive the contributions, record and acknowledge them, and pool the various alkaloids and salts for reprocessing, soon found they could not cope with the mountain of packages which arrived each day, and both the Navy and Army have had to come to the rescue by detailing pharmacists from the Navy Dispensary, the Bureau of Medicine and Surgery, and the Army Medical School to help handle the unending flow of boxes and cartons. Even with twelve men and women working full time on the task, a tremendous backlog of several thousand unopened packages quickly piled up and the personnel has been increased to eighteen in order to keep the project moving.

Within the first week after the contributions of pharmacists began to pour in, the large room which had been set aside to serve the needs of the pool had been outgrown, two additional rooms had to be cleared to provide space to handle the packages, and the halls connecting the rooms soon were crowded with thousands upon thousands of cartons awaiting attention. The operations of the pool now occupy nearly one-half of the entire lower floor of the AMERICAN INSTITUTE OF PHARMACY.

Never before has any profession been called upon to serve the armed forces of this nation in such an unusual manner and the way in which pharmacists are answering the call has astounded every Government official who has visited the Pool. Napoleon, who once slurringly characterized England as "a nation of little storekeepers," would get the shock of his life if he could see how the small, independent pharmacists of the United States are pooling their resources in this project of such vital importance to the war effort.

With many of the contributions come letters which typify the views of all pharmacists.

"I'm sending you all the quinine I have .... I only wish I had ten times as much to send," writes a pharmacist from Iowa who sent in a package of eleven different items.

PHOTO BY ACME

The White House receives Certificate Number 1 as Lt. George A. Fox contributes the quinine from the presidential dispensary to Robert W. Rodman, of the AMERICAN PHARMACEUTICAL ASSOCIATION.

"I know I could return my unopened packages to my wholesaler for credit, but I'd rather contribute them to our Armed Services" a California pharmacist writes.

"We have no malaria in our community and we are glad to contribute our entire stock in the hope that it may help the boys fighting overseas," states a Kansas pharmacist.

"This is little enough that we can do," writes a New York City pharmacist.

"Every grain of quinine we contribute will help bring Victory that much nearer," a Maine pharmacist writes.

"With the Armed Forces in such need of quinine, I would be ashamed to walk into my prescription room and find a single grain that hadn't been sent off to war," states a New Jersey pharmacist.

"Many of the boys who need this quinine are the sons of my customers. I've supplied them with the drugs and medicines they needed since the day they were born. What is more fitting than that I should send them the quinine they need?" So writes a Pennsylvania pharmacist.

These letters show that pharmacists are not merely sending their quinine in to the National Pool in compliance with a request from the Government. Rather, they show the fire of patriotism that flows through the veins of all Americans, coupled with the pharmacist's knowledge of the insidious chills and fever of malaria and his appreciation of the value of quinine as an antimalarial drug.

MORE QUININE NEEDED

Great as has been the response, however, the thousands of packages thus far received are but a fraction of the number which will come in if every pharmacist does his part. For every pharmacist who has packed up his quinine and sent it to the Pool, there are five pharmacists who "haven't got

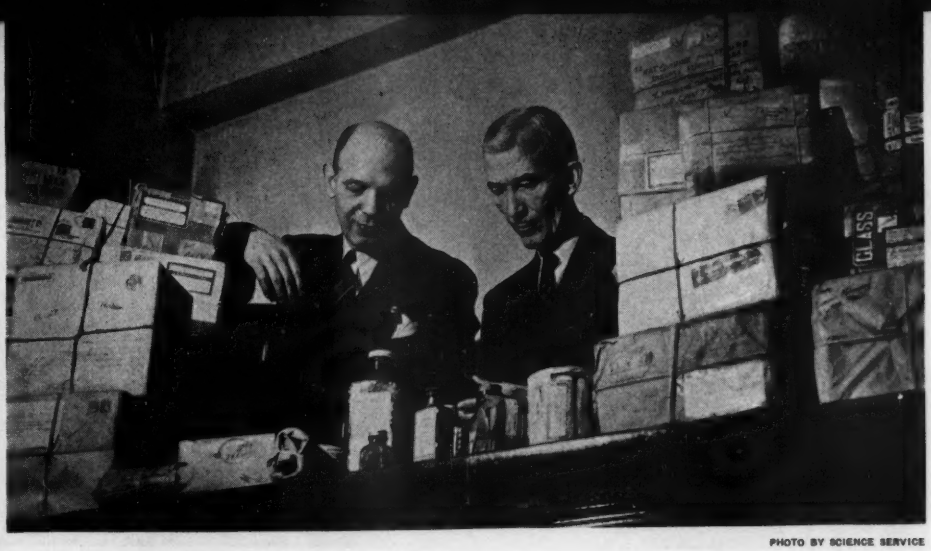


PHOTO BY SCIENCE SERVICE

Dr. E. F. Kelly, Secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION *(right), and Charles R. Bohrer, Assistant Secretary of the* ASSOCIATION *(left), examining a group of the packages of quinine and other cinchona derivatives as they arrive from pharmacists.*

A steady stream of mail trucks, packed to the doors, pull up to the back door of the AMERICAN INSTITUTE OF PHARMACY *daily as the contributions of pharmacists pour into the National Quinine Pool.*

A group of officers of the Hospital Corps of the U. S. Navy visit the Pool with Mr. Bohrer to see the life-saving contributions of pharmacists as they arrive. Left to right: Lt. W. P. Briggs, Ens. J. F. Buckner, Lt. C. P. Dean, Mr. Bohrer, Lt. E. G. Dennis, and Ens. W. A. Nugent.

Harold H. Hueter and Cary Anderson, pharmacist's mates of the U. S. Navy, tackle the mountain of packages of quinine and other cinchona derivatives received from pharmacists.

around to it yet." They have received their six-page folder from the War Production Board, and have put it aside to take care of at the "first opportunity," but unless they take a few minutes off right now to do it, they'll probably forget it. Let's not let malaria handicap our boys in North Africa and the Southwest Pacific because only 10 per cent, 25 per cent, or even 50 per cent of the pharmacists in nonmalarial areas of the United States sent in their quinine. *Make it 100 per cent.* Don't put it off until next Sunday when business should be slack; don't even put it off until business slackens off tonight after 9 o'clock—*do it now!* Get down that can of quinine sulfate, that bottle of quinine hydrobromide, those quinine sulfate capsules, and the small bottles of cinchonine and cinchonidine salts you have on hand—seal the containers, pack them up in a carton, and send them off to The National Quinine Pool, c/o THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Ave. N.W., Washington, D. C. It may be too late for you to make the *first* contribution of quinine from your state, but you can still make the *biggest* gift.

Turner Currens, Henry Heine, and John T. Batson, of the War Production Board examine a barrel of quinine capsules representing the contributions of hundreds of pharmacists.

When Maj. Gen. Magee, Surgeon General of the U. S. Army, returned recently from a trip to North Africa, he told reporters that malaria would be a big problem in that area with the coming of spring, and Hon. Frank Knox, Secretary of Navy, returning a few weeks ago from the Southwest Pacific, said that malaria was a real threat in that theater of war. If

Pharmacist's Mates of the Navy checking the individual packages and sorting the various salts. Left to right, Cary Anderson, Marvin Adams, William Hajla, Byron Baker, Raymond Schexnayder, and Harold Hueter.

you read the stories of newspaper men who are traveling with our forces at the front, if you read the several books which have been thus far written about the war, you cannot fail to be impressed with the malaria menace and the pressing need of our forces for antimalarial drugs.

As the war progresses, many of the battle areas will be shifted and some undoubtedly will move out of malarial regions, relieving, to some extent, the demand for quinine and Atabrine. Then, too, in time it may be possible to expand the production of totaquine from South American cinchona barks, and overcome its lack of stability, so that it will be satisfactory for the use of the Army in the field. But in the meantime, while practically all of our military operations are in malarial areas and totaquine production is in its infancy, pharmacists who have quinine on hand in their prescription rooms and dispensaries must step into the breach and help tide the Army and Navy over. A year from now the situation may be different, but we can't wait until a year from now to fight the war. The Armed Forces need quinine and they need it now.

STATE ASSOCIATION SUPPORT

One of the greatest forces in the National Quinine Pool is the support which the local and state pharmaceutical associations are giving. Every state which has a journal or bulletin has enlisted it in the drive, and several associations

Pharmacist's Mates Marvin Adams (left) and Harold Heuter (right) fill a barrel with contributions of quinine sulfate.

OFFICIAL PHOTOGRAPH, U. S. ARMY AIR FORCES

Your contribution of quinine will help keep this gun crew and others in action in tropical areas. Don't let malaria force them to retire—send your quinine off to war—and send it TODAY.

have set up "Quinine Crews" made up of members who have volunteered to make a store-to-store canvass to urge pharmacists to send in their quinine.

Every contribution received at the headquarters of the National Quinine Pool is credited to the state from which it came, so that it will be possible to show the percentage participation of every state. More than one state is out to win first place by seeing how near they can come to 100 per cent participation.

In Pennsylvania, where the pharmacists participated in a test quinine pool sponsored by the Philadelphia College of Pharmacy and Science, certificates have been issued to those who contributed and this state has a head start. The all-out efforts of other states, however, are fast rolling up sizable scores.

AN ALL-PHARMACY EFFORT

Every branch of the profession is taking part in the quinine drive. The colleges of pharmacy, state boards of pharmacy, wholesalers, manufacturers and others are all doing their share. Excerpts from articles appearing in leading state and national journals show how all the voices of the profession are joining in one large cry of "Send your quinine off to war." A few such excerpts follow:

"Money cannot buy quinine—it must come from those who have it. Only from quinine in stocks can this much-needed drug be supplied.

"Do something for freedom today—send in your quinine."

North Western Druggist

"If I were to walk into your store and ask that you give my boy, who was infected with malaria, enough quinine out of your stock to cure him or to keep him from taking malaria, I don't believe there is a single druggist in Tennessee but would give me all that my boy needed or more.

"Now, there are thousands of boys, maybe not mine nor maybe not yours, who need this quinine; they are somebody's boys, they have a fond relative here in America who prays for their safety and their safe return home.

"And for those thousands, we are appealing to you to contribute your stock of quinine and cinchona alkaloids right now.

"These boys in Guadalcanal, New Guinea, China, India, Burma and North Africa need this quinine and must have it if we are to come out victorious in this all-out war.

". . . for your sake, for our country's sake, and for God's sake . . . send it in right now."

Tom Sharp in the *Tennessee Pharmacist*

"Quinine and other cinchona alkaloids are needed in North Africa, Guadalcanal, Burma and other malaria-infested regions, more than they are needed on your prescription shelves. Boys sloshing through the jungles, or tramping the burning sands, may owe their life to your generosity in contributing stocks of broken or unbroken packages to the National Quinine Pool."

The Kansas Pharmaceutical News

"One shipment of the much-needed drugs has already left the offices of the North Carolina Pharmaceutical Association and another will soon be on the way. To date the equivalent of

eight thousand five-grain doses of quinine sulfate have been shipped."

The Carolina Journal of Pharmacy

"The National Quinine Pool presents to the pharmacies of New York State an opportunity never before had of contributing to the welfare of our armed forces in a spirit of patriotism. We know they will rise to the occasion."

The New York State Pharmacist

"It is not definitely known the amount of quinine held in prescription and dispensary stocks, but if these are given as they should be, the Nation's Capital is really going to see some quinine."

The Midwestern Druggist

"So important is the control of malaria to the health of troops in many of the combat zones that the supply or lack of quinine might well be the determining factor in the winning of the war."

Journal of the American Medical Association

"There is no more patriotic group (than pharmacists) in America. They can be counted upon to render any service, assume any burden, undergo any privation which will help win the war. Those who would scoff at these facts know precious little of the frame of mind of pharmacists these trying, anxious days.

"But delay is dangerous. So go over your prescription shelves, delve into the drawers and other hideaways for quinine and other cinchona alkaloids. Get them together . . . and mail your donation of opened containers to the National Quinine Pool . . . .

"This display of teamwork between the WPB and the A. PH. A. should make us very proud. It puts every drugstore in the war effort and this, I know, is just what pharmacists have been hopefully looking for."

DR. ROBERT L. SWAIN in *Drug Topics*

"The National Quinine Pool established by the AMERICAN PHARMACEUTICAL ASSOCIATION and the Drugs and Chemicals Section of the Chemicals Division of the War Production Board is a war necessity.

"No traveling salesman or detail man can serve his country's needs better in any other way than he can by striving to be the champion quinine collector of his house."

Oil, Paint and Drug Reporter

SEND YOUR'S OFF

If you haven't sent your stock of quinine and other cinchona derivatives—powder, pill or capsule—off to the National Quinine Pool, do it today. If you have mislaid your folder which

Small bottles, large bottles, official salts, and unofficial salts of cinchona derivatives are needed to help fight this war.

PHOTO BY SCIENCE SERVICE

contained the card to enclose with your shipment, send a letter to that effect at the same time you send in your contribution. You will receive a certificate from the National Quinine Pool in acknowledgment. An accurate record is being kept of every pharmacist's contribution.

Send bulk quinine and other cinchona salts and alkaloids and tablets, capsules and pills of them. Do not send preparations of quinine or other cinchona derivatives which are in combination with other medicinal agents, such as Quinine and Urea Hydrochloride, Quinine and Urethane, Quinine Bismuth Iodide, etc. Do not send ampuls and parenteral medication or liquids.

Send your contribution to:

THE NATIONAL QUININE POOL
War Production Board—
Defense Supplies Corporation
c/o American Pharmaceutical Association
2215 Constitution Ave., N. W.
Washington, D. C.

QUININE STORY TOLD ON THE AIR

RADIO PUBLIC LEARNS OF THE CONTRIBUTION OF PHARMACISTS IN COAST-TO-COAST PROGRAM

CARRYING the story of the National Quinine Pool to the public by radio, Robert W. Rodman, Editor of THIS JOURNAL, appeared as the guest of Watson Davis, Director of Science Service, on his "Adventures in Science" program, over the coast-to-coast facilities of the Columbia Broadcasting System. Mr. Davis' questions concerning the project and Mr. Rodman's replies were as follows:

Mr. Davis: "Our guest today is Robert W. Rodman, editor of the Practical Pharmacy Edition of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. He is to bring news of what those who compound the prescriptions of the nation are doing to help our fighting men. Malaria is one of our greatest enemies in this war, I understand, Mr. Rodman."

Mr. Rodman: "Yes, Mr. Davis, if the supply of two drugs, quinine and Atabrine, were cut off from our Army and Navy, we would have to abandon practically every battlefront on which our troops today are fighting. North Africa, Guadalcanal, Burma, India, and China are among the most malaria-infested regions of the world and no military operations would be possible in these areas unless our armed forces had adequate supplies of these two antimalarial drugs to fight the deadly chills and fever which follow the bite of infected mosquitoes."

Mr. Davis: "What are these two drugs, quinine and Atabrine?"

Mr. Rodman: "Atabrine is a synthetic drug, the product of the test tube and laboratory, and we are producing all we need of it in pharmaceutical manufacturing plants in this country. It is a valuable antimalarial drug but is not a completely satisfactory substitute for quinine. In the first place it is slower acting and does not bring the case of malaria under control as quickly as quinine does, and secondly Atabrine produces toxic reactions in a considerable number of persons and thus cannot be tolerated by them. Quinine is the drug of choice for the first few days of malaria treatment in all cases, in order to control the disease as quickly as possible, and in individuals who are susceptible to Atabrine's toxic side-actions quinine must be used for the entire treatment."

Mr. Davis: "Quinine is a natural drug, isn't it, Mr. Rodman?"

Mr. Rodman: "Quinine is extracted from the bark of the cinchona tree and no one has yet been able to manufacture it synthetically. Although the cinchona tree grows wild in the jungles of South America, the Dutch, many years ago, transplanted seedlings to Java and other islands of their East Indies where they cultivated them intensively. They were successful in developing hybrid varieties of the cinchona trees whose bark yielded a far greater amount of quinine than that of the wild trees in South America, and within a

short space of time the plantations of the Dutch East Indies were furnishing over 90 per cent of the world's supply of this drug. The Dutch could produce quinine from their high-yielding cultivated trees so much more economically than anyone could produce it from low-grade trees that even South American countries where the cinchona trees grew wild bought the quinine they needed to fight malaria from the Dutch."

Mr. Davis: "When war came we realized that this was a vulnerable situation."

Mr. Rodman: "One of the first objectives of the Japanese after Pearl Harbor was the seizure of the cinchona plantations of the Dutch East Indies, and they fell into the hands of our enemy early in 1942. With the source of practically the world's supply of quinine in their control, the Japs undoubtedly figured that they would enlist malaria on their side and that the ravages of this disease would wipe out our armed forces by the tens of thousands within a very short time."

Mr. Davis: "It didn't prove as bad as all that, did it, Mr. Rodman?"

Mr. Rodman: "No, the Japs didn't figure on the ingenuity of the American people. In the first place, our Government accumulated a considerable stockpile of quinine immediately before the outbreak of the war. This quantity would probably have been sufficient for our needs if it hadn't been for the fact that all of our theaters of war have developed in malarial areas and thus placed a heavy drain on our stockpile.

"Our second step was to conserve against dissipation such quinine as we had in commerce. You see, quinine is not only our most effective drug for the treatment of malaria, it is extremely valuable in the treatment of colds, it is an excellent bitter tonic to stimulate the appetite, dissolved in oil it has the ability to screen out the ultraviolet rays of sunlight which cause sunburn, and it is an ingredient of many sunburn preventives that you use at the beach, and it is also widely used in hair tonics. Other drugs can be used in place of quinine for colds, in bitter tonics, in sunburn preventives, and in hair tonics, but nothing can quite replace quinine as an antimalarial. So last April the War Production Board issued an order prohibiting the use of quinine except in the treatment of this disease."

Mr. Davis: "So great is the need of our armed forces for quinine, however, that still further steps have become necessary."

Mr. Rodman: "Yes, Mr. Davis, when WPB issued its Quinine Conservation Order last April, it 'froze' the supplies of quinine in powder, pill, and capsule form that thousands of retail pharmacists and hospital pharmacists have in their prescription rooms and dispensaries. Malaria is practically unknown in three-fourths of the United States and, since the drug cannot be used for anything except the treatment of this disease, it is estimated that there are between three and eight tons of quinine in the hands of pharmacists in areas where it is not needed.

"The problem of how to get this quinine into the stockpile from the shelves of some 40 to 50 thousand prescription rooms and dispensaries at first seemed almost insurmountable to Government officials—but they found it was surprisingly simple—all they had to do was ask for it."

Mr. Davis: "Uncle Sam sort of wrote a prescription calling in this valuable drug."

Mr. Rodman: "That was about it, Mr. Davis. A test was first conducted in Pennsylvania. The Philadelphia College of Pharmacy told the pharmacists of that state of the need for quinine and urged them to contribute their prescription room stocks for the use of the armed forces. Thousands of ounces poured in and based on the success of the Pennsylvania test, the War Production Board and the Defense Supplies Corporation asked the AMERICAN PHARMACEUTICAL ASSOCIATION to establish a National Quinine Pool at its headquarters, THE AMERICAN INSTITUTE OF PHARMACY, 2215 Constitution Avenue, Washington, D. C. The ASSOCIATION gladly accepted the task and has been appointed the agent of the Government to collect quinine supplies.

"Within the past few days every retail pharmacist and hospital pharmacist in the United States has received a six-page folder from WPB in which Rear Admiral Ross T. McIntire, Surgeon General of the U. S. Navy, and Brigadier General Larry B. McAfee, Acting Surgeon General of the U. S. Army, frankly stated the needs of the armed forces for quinine and appealed for the help of the pharmaceutical profession."

Mr. Davis: "How are the pharmacists responding?"

Mr. Rodman: "The pharmacists of the country are answering the appeal with an almost unending stream of packages of all sizes, shapes, and descriptions which are pouring into the National Quinine Pool day after day. So great has been the response that during the last few days the volume of packages arriving has swamped the rather elaborate facilities which were set up to

handle them. Some of the packages contain the last few grams that a pharmacist had left from the last prescription he compounded, others contain bottles of 500 or 1000 five-grain quinine capsules which were originally destined to treat colds but which now are off to war to fight malaria."

Mr. Davis: "This is a real contribution to the war, it seems to me."

Mr. Rodman: "The cash value of the pharmacists' contributions ranges from a few cents to several dollars each, but their actual value cannot be figured in dollars and cents. With Java in the hands of the Japs, quinine is unobtainable at any price. It is not often that an individual in civilian life has the opportunity to make such an important contribution to the war effort; to give the armed forces a vital, strategic drug that money can't buy.

"Quinine is also pouring into the National Pool from a number of other, unusual places. Apparently the pharmacist's drive has started everyone looking for quinine. A soft drink manufacturer found several ounces of the drug which was a left-over ingredient from a long since discontinued quinine-water beverage. Last week the Superintendent of a Home for the Aged and Infirm in Washington, D. C., found a stock of 9000 three-grain quinine pills which had been in an old storeroom since the last World War. Quinine does not deteriorate with age and these old pills will be reprocessed for the use of our soldiers overseas."

Mr. Davis: "Are we protecting ourselves sufficiently against malaria at home?"

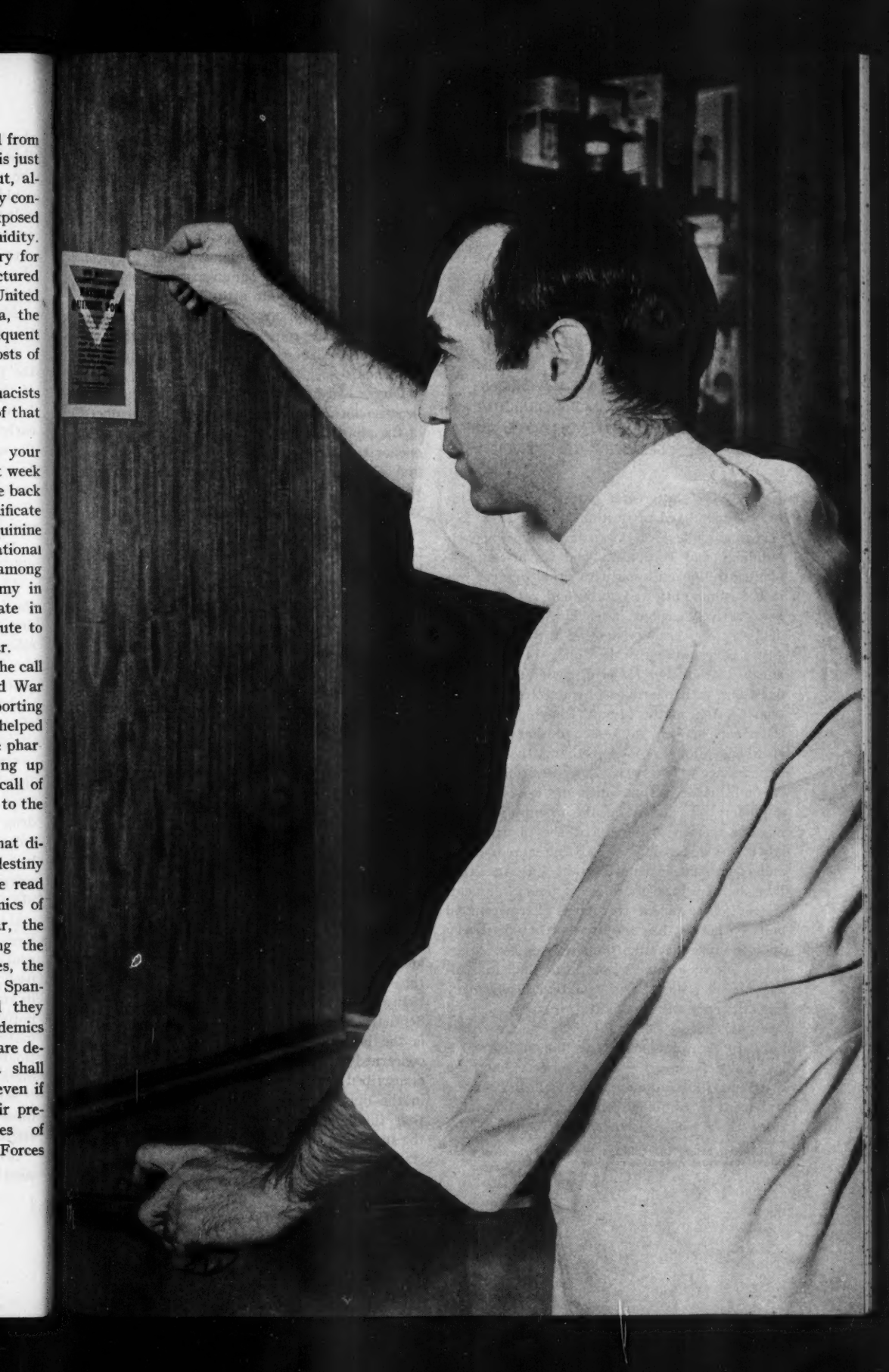
Mr. Rodman: "Let me assure you that this huge pooling of available quinine supplies will not leave the American people without protection against malaria. In the first place, only the pharmacists in areas where malaria is comparatively unknown are contributing their stocks of the drug, and furthermore, through the coöperation of Governmental, medical, and pharmaceutical agencies a drug known as Totaquine has been developed in this country for the treatment of malaria. Totaquine is a mixture of all the alkaloids of cinchona and it can be produced from the low-grade barks of South America. It is just as effective as quinine against malaria but, although it is physically stable under ordinary conditions, it gets sticky and gummy when exposed to great variations of temperature and humidity. Thus, although it is completely satisfactory for use in this country, and it is being manufactured by several large drug companies in the United States, it cannot stand shipment to Africa, the Solomons, China, and Burma, and subsequent exposure to the elements in the medical posts of an army in the field."

Mr. Davis: "Are the coöperating pharmacists being given a service badge or something of that sort?"

Mr. Rodman: "When you stop in at your neighborhood pharmacist's during the next week or so, you'll probably see a small certificate back near his license and his diploma. The certificate reads, 'We have contributed our stocks of quinine and related cinchona derivatives to the National Quinine Pool to be used to combat malaria among the Armed Forces fighting the Axis enemy in Tropical Areas.' Look for this certificate in your pharmacy, it is a well-deserved tribute to the man who has sent his quinine off to war.

"Just as the taxicabs of Paris rallied to the call of the French Army during the last World War and by their emergency service in transporting troops to the front saved their city and helped turn the tide of defeat into victory, so the pharmacists of this country today are packing up their stocks of quinine in answer to the call of our Army and Navy and sending them off to the National Quinine Pool.

"Pharmacists know that disease often decides the destiny of nations. They have read of the smallpox epidemics of the Revolutionary War, the toll of dysentery during the War between the States, the scourge of typhoid in the Spanish-American War, and they remember the "flu" epidemics of the last war. They are determined that malaria shall not decide this war, even if they have to strip their prescription room shelves of the drugs our Armed Forces need."



A DENTIST LOOKS AT PHARMACY

by HOWARD M. MARJERISON

DEAN, UNIVERSITY OF ILLINOIS COLLEGE OF DENTISTRY

DENTISTRY AND PHARMACY HAVE BECOME TOO ENGROSSED IN THEIR OWN SPECIALIZED FIELDS. THE NEXT STEP IN OUR EDUCATIONAL DEVELOPMENT MUST BE TO BRING TOGETHER THE HEALTH GROUPS AS ONE COORDINATED WORKING TEAM WITH A COMMON OBJECTIVE OF RENDERING A HIGH TYPE OF HEALTH SERVICE TO SOCIETY

DURING the greater part of my adult life I have lived in Boston, Mass. There is a very fine College of Pharmacy in Boston. Its buildings and equipment and its accomplishments, are looked upon with pride by everyone in the community and state, and yet, although I was actively engaged in teaching and practicing dentistry for nearly twenty-five years in this city, I never set foot in the College of Pharmacy, nor do I recall that I ever discussed educational questions with pharmacists connected with the school. As a matter of fact, I have often heard the remark made by my associates that pharmacy as an educational problem is dying, that colleges of pharmacy were conceived to meet a different set of conditions from that which now exists. Their argument was based on the assumption that modern therapy had reduced the pharmacist's labor to dispensing already prepared drugs and compounds from a bottle. I confess that I began to believe the logic of their argument. It seemed reasonable that large pharmaceutical houses with all their resources of brains, money and equipment could prepare complex drugs better and in a more stable form than individual pharmacists. Ergo, traditional pharmacy schools were on the way out.

But then I came to Illinois a year ago last fall. In the intervening year I have learned a lot about pharmacy. My experience has been a striking illustration of the significance of the statement attributed to an ancient philosopher that "those who live beyond the mountains are barbarians." Oh, how many values are lost in preoccupation with our own small sphere of activity. Most of our attitudes of mind, our prejudices, conceptions and opinions of nations, institutions and professions are changed when we get to know more about the other fellow's problems.

I have had here at Illinois an opportunity to become intimately acquainted with members of the pharmacy faculty; this has been an eye-opener to me in more ways than one. In the first place, it has emphasized the mutual advantages to be gained by close affiliation of the various branches of medical science, and in the second place, it has demonstrated the unity of purpose which exists among all branches of the healing art.

My attitude on this point is clearly stated in a recent article which I was called upon to write on "Dentistry as a Career." Among other things I said, "One important segment of human activity embraces the health services—for example, medicine, dentistry, pharmacy, nursing, public health workers, comprising a personnel of over a million and one half individuals in this country alone. Each of these specialized fields has one common purpose—to minister to the health of the people. Each of these fields calls for a similar background of preparation, interest and intellectual qualities. It is probably safe to say that a qualified individual could lead a satisfying career in any one of these subdivisions of health service. Therefore it becomes a matter of personal choice in arriving at a final decision concerning which profession he will select as a career. Each has certain opportunities and features peculiar to itself, but all require the same basic attributes."

In other words, the focus point of pharmacy, dentistry and medicine or any of its branches is the human organism. In dentistry we are concerned with maintaining the health of a circumscribed area of the human body, and yet in the light of newer knowledge, it is evident that intelligent comprehension of diseases of the teeth and jaws must be based on an understanding of the whole organism. Moreover,

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our treatment is constantly being modified by increased knowledge of the functional activity of the body in health and disease.

The pharmacist, in turn, is concerned primarily with the field of pharmacology and therapeutics; with the compounding and manufacture of remedial agents for the control and cure of disease. While it is true that he is not responsible for diagnosis, yet he must be familiar with activities in the field of medicine, especially with the underlying problems of medicine. He must know something about disease, the chemistry and physiological activity of the human organism. It is in this area that the various branches of the healing art converge.

But the full realization of this concept has been handicapped by the fact that colleges of pharmacy and dentistry developed as more or less independent institutions, some proprietary in character and others with loose university affiliation. Their constituents became segregated into closely knit units, engrossed in their own specialized fields, thereby pulling away from allied professions.

Since the turn of this century, however, revolutionary developments in the field of science have released a centripetal force which is bringing the practice and educational facilities of the various branches of health service together. Consequently, it is important for those of us in pharmacy and dentistry to study the implications of these forces which have profoundly affected the economic, social and educational structure of this country since 1900. As a matter of fact, the first forty years of this century constitute an amazing era, an era which has been punctuated by social upheavals and economic catastrophes —the World War, the jazz era, prohibition, the boom period, depression, culminating in the present cataclysm in Europe. With all this chaos, strife and despair, the triumphs and accomplishments of the last forty years have been to a large extent obscured. Paradoxical as it may seem, during this same period more contributions have been made to the welfare of humanity than during any other period in history.

In order to emphasize the dynamic nature of this period[1] let me remind you that about forty years ago this country was shocked by the assassination of President McKinley, and under

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[1] C. F. Kettering, *Research—An Eye to the Future*.

dramatic circumstances a man named Roosevelt entered the White House. At this time the automobile was a rarity; the horse and buggy dominated the scene. The Wright brothers had not yet made their first successful airplane flight. The moving picture was in the nickelodeon stage. Telephones and electric lights had just been perfected. Gas was the last word in household illumination and the nostalgic odor incident to the ceremony of burning off the Wellsback mantle still lingers in the minds of those who participated. At the time of Theodore Roosevelt's death in 1919 he had no way of knowing that millions of American homes would contain instruments capable of capturing music sent through the air or that people could hear the same entertainment while rolling smoothly along concrete highways thousands of miles long.

It will not be necessary for me to continue this recital of technical advances which are familiar to all of you. My object is to emphasize that most of the things we now accept as commonplace in our daily lives—electricity, running water, automobiles—have been developed during these last forty years.

In addition to these improvements in transportation, comfort and entertainment, there have been equally important advances in the treatment and control of disease. It is astonishing to contemplate the fact that the majority of scientific methods in modern medicine have been perfected and applied within the lifetime of many of us. I personally can remember when the cause of appendicitis was not known. It was referred to as inflammation of the bowels and was usually fatal. One of my physician patients practiced in the days before aseptic surgery, and operated in hospitals with a common sponge. Prior to 1900 parents were haunted by the fear of diphtheria; a child with diabetes was doomed; typhoid fever, small pox, tuberculosis, pernicious anemia, all have either been eliminated as a menace to society or have been placed under reasonable control since the turn of the century.

EDUCATIONAL DEVELOPMENTS

These contributions to the welfare of society have been interlocked with revolutionary changes in the field of education. For example, in 1900 the dental curriculum consisted of three years, with a high school diploma or its equivalent as an entrance requirement. Today, four years of professional training are required for a degree, and two years of study in a college of liberal arts are the minimum requirement for admission, which adds up to six years of training above the level of high school in 1941 in contrast to three years in 1900.

What is the reason for this one hundred per cent increase in dental educational requirements? What has led dentistry in this relatively short space of time from an independent vocational school to the status of a university discipline? In order to understand the currents which have propelled dentistry to its present position, it is necessary to consider the situation which existed in medical education in 1900. Contrary to the traditional conception, dentistry is not a self-contained educational unit, but is inseparably bound with the field of general and medical education. Its underlying science is the underlying science of medicine; it differs only in the application of that knowledge. In theory, it is a specialized field of the healing art in the same category as the specialty of the eye, ear, nose and throat, or any other branch of medicine. Therefore, its development and progress are dependent upon development and progress in the field of medical science. In 1900 medical education in this country was just beginning to emerge from the depths of commercialism and charlatanism; on the whole it was sickly and undernourished. It was not until fifteen years later that it established itself on the high university plan which it now occupies.

To give you a clearer idea of the state of affairs which existed in medical education at the turn of this century I quote from a report on medical education by Abraham Flexner which was published in 1910. He says: "First and last, the United States and Canada have in a little more than a century produced four hundred and fifty-seven medical schools, many, of course, short-lived, and perhaps fifty still-born. One hundred and fifty-five survived in 1907. Of these, Illinois, prolific mother of thirty-nine medical colleges, still harbored in the city of Chicago fourteen; forty-two sprang from the fertile soil of Missouri, twelve of them still "going" concerns; the Empire State produced forty-three, with eleven survivors."[2]

[2] Abraham Flexner, *Medical Education in the United States and Canada*. Report of the Carnegie Foundation for the Advancement of Teaching, 1910.

The Final Report of the Commission on Medical Education published in 1932 makes this interesting observation with respect to medical education during this early period: "In 1905, for example, only five of the 160 medical schools required any college work for admission. Ten years later, however, eighty-five of the ninety-six schools prescribed either one or two years of college work as a minimum preparation."

These quotations bring out the fact that between 1900 and 1915, medical education in this country was going through drastic reorganization and that, in general, it has only reached university status at a comparatively recent date (1915). But the attainment of university status does not tell the whole story; it is but a symptom, a reaction to important currents and ground swells which were forcing medicine toward higher standards. The propelling force behind all this reorganization was the great influx of scientific knowledge which poured from the minds of scientists, particularly in Europe. It has been well said that more advance has been made in scientific knowledge in the last sixty years than during the preceding twenty centuries. During the last century, a great galaxy of scientists were diligently working in their laboratories; Koch, Lister, Pasteur, Bernard and countless others were developing their researches out of which were to come the sciences of pathology and bacteriology, aseptic surgery and the laws of sanitation. In fact, it was this group of men who laid the groundwork for most of the triumphs of modern medicine. Moreover, the new fields of knowledge which they opened up completely changed the vision of medicine and the course of medical education. It was through their studies on structure and function that we began to appreciate the complexity of the human organism and the interdependence of its various parts. There was no escaping the fact that if the implications of this new knowledge were to be realized, future practitioners of medicine must be trained along broad intellectual lines. The response of American medicine and the support of higher standards in education by the public constitute one of the great achievements of the last forty years.

But we should not forget the scientists and scholars who set the pace. They are the real conquerors of the last century. At the same time we should underline the important fact that all the contributions which have been made to the welfare of humanity during this twentieth century have been made possible by men who, in the case of medicine, were interested in knowing about the nature of disease, an entirely different thing from the treatment of disease; or in the case of the contributions to our comfort and entertainment, by men who discovered fundamental knowledge from which were deduced physical laws, a far different thing from the invention of an automobile or radio. It is this fact which is of the greatest significance to education and society.

What has been happening to dentistry and pharmacy during this great upheaval in the field of medicine? Obviously they could not escape the impact of newer knowledge. It is equally obvious that they were more or less orphans in the storm while medicine was going through the labor pains of its educational rebirth, but as I have pointed out, developments in dental and pharmaceutical education are dependent upon developments in medical science. As soon as medicine placed its educational house in order in 1915, things began to happen in dentistry and pharmacy.

The advance of dental education from a three- to a six-year program, which I previously referred to, has taken place since 1918. In pharmacy the educational advance from an apprenticeship system to a two-year program, culminating in the present four-year collegiate requirement has all occurred since 1920.

The seeming indifference of medicine to the fate of dentistry and pharmacy has arisen largely from the fact that medicine has had its hands full placing its own house in order. Then, too, dentistry and pharmacy have not been without fault. Through tradition they became jealous of their prerogatives and built walls to defend their autonomy. Dentistry and pharmacy in turn must go half-way. In this respect, physical relationship is not enough. It must also be spiritual and intellectual relationship.

On this basis I believe that the next important step in educational development will be closer affiliation of medicine and all its branches. It will be a process of bringing the various specialized fields together as a coördinated working team with a common objective of rendering a superior health service to society.

Mrs. C. A. Steinmetz and Dr. M. W. Green examine N. F. Preparations of decreased glycerin content.

A. PH. A. LABORATORIES STUDYING GLYCERIN REPLACEMENT PROBLEM

SHORTAGE OF THIS INGREDIENT OF MANY PHARMACEUTICALS MAY MAKE IT NECESSARY TO CURTAIL ITS USE IN THE NEAR FUTURE

FROM 20 to 50 per cent of the glycerin contained in many National Formulary preparations probably can be omitted or replaced with liquid glucose without affecting their appearance, taste, or stability, according to studies conducted by E. C. Beeler, C. A. Steinmetz, and M. W. Green in the laboratories of the AMERICAN PHARMACEUTICAL ASSOCIATION. With large amounts of glycerin being used in the manufacture of explosives and other war necessities, supplies of the drug for civilian purposes are rapidly becoming scarce and pharmacists must prepare to economize as much as possible in their use of it.

The three members of the A. PH. A. laboratory staff have suggested modified formulas for 30 N. F. elixirs, glycerites, solutions, mixtures, and syrups. It should be stressed that this study is preliminary in character and is being continued to determine the stability of preparations made with the modified formulas over long periods of time. The 30 suggested modifications in N. F. formulas are as follows:

Elixir of Aminopyrine—the amount of glycerin is cut from 60 cc. to 30 cc.

Elixir of Bismuth—the amount of glycerin is cut from 125 cc. to 63 cc.

Elixir of Calcium and Sodium Glycerophosphates—150 cc. of the glycerin is replaced by 150 cc. of liquid glucose.

Compound Elixir of Euphorbia—110 cc. of the glycerin is replaced by 110 cc. of liquid glucose.

Elixir of Iron and Strychnine—150 cc. of the glycerin is replaced by 150 cc. of liquid glucose.

Elixir of Iron and Strychnine Phosphates—150 cc. of the glycerin is replaced by 150 cc. of glucose.

Glycerinated Elixir of Gentian—the amount of glycerin is cut from 400 to 320 cc.

Compound Elixir of Glycerophosphates—175 cc. of the glycerin is replaced by 175 cc. of glucose.

Low-Alcoholic Elixir—the amount of glycerin is cut from 200 cc. to 160 cc.

High-Alcoholic Elixir—the amount of glycerin is cut from 200 cc. to 160 cc.

Elixir of Pepsin—the amount of glycerin is cut from 200 cc. to 160 cc.

Elixir of Pepsin and Bismuth—62 cc. of glycerin is replaced by 62 cc. of liquid glucose.

Elixir of Terpin Hydrate—200 cc. of glycerin is replaced by 200 cc. of liquid glucose.

Compound Elixir of Viburnum Opulus—75 cc. of glycerin is replaced by 75 cc. of liquid glucose.

Elixir of Viburnum Prunifolium—75 cc. of glycerin is replaced by 75 cc. of liquid glucose.

Glycerite of Bismuth—95 cc. of glycerin omitted.

Glycerite of Iodine and Zinc Iodide—the glycerin is cut from 55 cc. to 45 cc.

Glycerite of Pepsin—the glycerin content is cut from 500 cc. to 400 cc.

Alkaline Aromatic Solution—the glycerin content is cut from 100 cc. to 80 cc.

Solution of Carmine—180 cc. of glycerin is replaced by 180 cc. of liquid glucose.

Solution of Cochineal—the glycerin content is cut from 450 cc. to 360 cc.

Phenolated Solution of Iodine—83 cc. of glycerin is replaced by 83 cc. of liquid glucose.

Solution of Nux Vomica Alkaloids—the glycerin content is cut from 500 cc. to 320 cc.

Solution of Sodium Phosphate—the glycerin content is cut from 150 cc. to 120 cc.

Compound Mixture of Opium and Glycyrrhiza—60 cc. of glycerin is replaced by 60 cc. of glucose.

Mixture of Rhubarb and Soda—the glycerin content is cut from 200 cc. to 160 cc.

Syrup of Ammonium Hypophosphite—the glycerin content is cut from 300 cc. to 240 cc.

Syrup of Calcium Lactophosphate—the glycerin content is cut from 300 cc. to 240 cc.

Syrup of Hypophosphites—the glycerin content is cut from 300 cc. to 240 cc.

Syrup of Hypophosphites Compound—the glycerin content is cut from 300 cc. to 240 cc.

NAVY RATINGS AVAILABLE TO PHARMACIST-INDUCTEES

GRADUATE or registered pharmacists who are drafted will be eligible for ratings in the Hospital Corps of the U. S. Navy without undergoing the elementary training courses given in Hospital Corps Schools, according to new instructions issued by the Navy to all U. S. Naval Training Stations. Inductees who are 20 years of age or over, and who submit acceptable evidence of graduation or registration in pharmacy, may be advanced to Pharmacist's Mate, third class, after a short period of indoctrination, and sent directly to Naval Hospitals for one month's orientation in the duties of the Hospital Corps, on the completion of which they may be recommended for advancement in rating to Pharmacist's Mate, second class.

Pharmacists who desire to be assigned to the Hospital Corps of the Navy should so indicate at the time they present themselves for induction. They should have with them evidence of their graduation or registration.

Inductees who elect to serve in the Navy and who have had training or experience in pharmacy, but are neither graduates nor registered pharmacists, must complete a recruit training course, at the end of which they will be rated as Hospital Apprentices, second class or first class, and sent to a Naval Hospital for orientation. A background in pharmacy and the individual's personal application, even though he may not be a graduate or registered pharmacist, may enable him to obtain a rating as high as Pharmacist's Mate, second class at the end of this training.

In the past, the petty officer requirements of the Hospital Corps have been met in part by the enlistment of professionally qualified V-6 reservists, most of whom have been college graduates or registered practitioners in various fields of professional service. With voluntary enlistments banned for men between the ages of 18 and 38, the Navy has found it desirable to make special provisions for men who possess measurable and standardized civilian education in these fields. The new procedure applies not only to pharmacists, but to other professionally qualified men in the auxiliary fields of medicine.

The Beveridge Report

RECENT ENGLISH STUDY GIVES A PRE-VIEW OF SOME OF THE POST-WAR PROBLEMS WHICH WILL AFFECT MEDICINE AND PHARMACY. WILL THE AMERICAN PEOPLE DEMAND THAT HEALTH SERVICES BE SUPPLIED BY THE GOVERNMENT JUST AS EDUCATIONAL SERVICES ARE PROVIDED FOR THEM TODAY?

IF Bernard Baruch had been commissioned to make a comprehensive study of social security in the United States, instead of an analysis of the rubber situation, the resulting Baruch Report would be comparable to the Beveridge Report on Social Insurance and Allied Services which was issued recently in England. It is inevitable that a similar study will be made in this country within the near future for it covers a subject which appears to be the crux of "post-war planning." President Roosevelt was expected to launch such a project in his address to Congress a few weeks ago and, although he did not go that far, he did cite as an important post-war project the guaranteeing of freedom from want to the American people "from the cradle to the grave."

Millions of Americans who have carried the load of producing war materials, and thus have played an important role in the conflict, are none too satisfied with the life they lived before the war. Unemployment and illness, with resulting poverty, robbed them of the opportunity to enjoy "life, liberty and the pursuit of hapiness," and they are going to have a voice in planning the post-war social program. Their demand may be summarized in three words: "freedom from want," and it is an appeal which will be heard many times over during the next few years.

By "freedom from want" the public means it wishes an assurance of a livelihood free from the hazards of unemployment, illness, disability, or any other difficulty which might arise. The Social Security legislation which we now have in this country gives assurance of old age retirement income, and many states have unemployment compensation laws. Thousands of persons carry accident insurance policies with private companies to pay doctor's bills, hospital charges, and other expenses which an accident might cause. Some persons, carry sickness insurance and millions of employees contribute to group hospitalization plans. All of these protective measures are attempts to provide freedom from want and relief from the necessity of sudden large expenditures.

In England such social protection is even more advanced than it is in the United States. What the Beveridge Report contemplates is the replacement of such piecemeal attempts to provide protection with a comprehensive public policy to embrace all of the hazards and uncertainties of life which might prevent one from living in freedom from want.

Sir William Beveridge, author of the report, proposes that after the war a group of impartial expert authorities determine the minimum amount of income needed to sustain an individual. This amount would then be assured to everyone, and, in addition, special allowances would be made for maternity benefits, funeral benefits, and marriage grants and health services would be furnished; the whole project being financed by an insurance system to which the individual, the employer and the government would contribute.

The idea of guaranteeing to everyone an income sufficient to sustain himself, and protecting him from any large expenses such as doctor's bills, funeral bills, etc., which would put him into debt, is revolutionary, but Beveridge says in the introduction to his report that this is a revolutionary period in the world's history, with the war abolishing landmarks of all time, and it is the time to consider a revolutionary scheme of social security rather than to try to patch up

present protective methods. In other words, as applied to the United States, he believes an all-embracing program should replace our present Social Security legislation, group hospitalization, plans, unemployment compensation laws, etc., which individually attack parts of the problem or give protection to limited numbers of people. He would substitute comprehensive protection to all persons.

FREEDOM FROM WANT

Surveys in a number of English cities have shown that three-fourths to five-sixths of want is caused by interruption or loss of earning power, and practically all of the remaining one-sixth to one-fourth is due to the fact that under the present system income is not related to the size of the family to be supported.

Protection from interruption or loss of income would be provided under the Beveridge Plan by improving and extending social insurance covering unemployment, sickness, disability, widow's pensions and retirement income. It would call for an all-over insurance scheme to cover everyone, an extension of protection to include all types of risk, and an increase in the rates of benefit. It would include a comprehensive health and rehabilitation service.

The adjustment of income to the needs of different sized families would be provided by children's allowances. The family would receive a weekly allowance for each dependent child in order to prevent lack of income from being a determent to having children and to prevent the number of children a family has from being a cause of want.

HEALTH SERVICES

Although the Beveridge Report makes no specific reference to providing pharmaceutical services under its suggested comprehensive health service, it is rather obvious that such would be included.

Sir William Beveridge's proposals in regard to health services may be summarized by his statement that the people should be entitled to health in the same manner as it is today an accepted fact that they are entitled to education provided by the government. Using this as a corollary, Beveridge states that the place of the private physician would be about that of the private school today. Those who desired and could afford to pay for a high type of medical service, despite the fact that he is entitled to free service, would be free to retain a private physician, just as a parent today can send his child to a private school instead of public school, if he so desires.

The Beveridge Report does not go into details concerning the Health Service portion of its plan; it merely outlines the basic premise on which health and rehabilitation services would be provided and constructs the framework around which the plan would be developed. It is obvious that such a plan would have a profound effect upon the health professions as they exist in an individual, private capacity today, and would make them, for all intents and purposes, agencies of the government. The medical profession and the pharmaceutical profession would become the medical service and the pharmaceutical service of the government, respectively.

There are indications that the adoption of such a comprehensive health service plan would require the services of considerably more physi-

The institution of a health service plan such as recommended by the Beveridge Report would have a profound effect on pharmacy as practiced today.

PHOTO BY LAMBERT

cians and pharmacists than are at present required. Medical care competes today for the money which a family has available after rent, food and clothing are paid for. Unquestionably, there are large groups of people who are not receiving proper medical and dental care because they cannot afford it, yet they are above the free clinic or charity level. If these groups were to obtain the health care they require, and physicians, pharmacists and dentists were recruited on the basis of the need for their services, rather than on the basis of their ability to make a living out of such money as the people have available for health care, considerably greater numbers of professional men would be needed.

Under present-day conditions it has been said that the average physician gives one-third of his time and attention without charge, and relies on his charges against the other two-thirds for his living. The trend of increasing taxes, corporate and individual, however, is such as to reduce each year the number of wealthy individuals who can carry the financial load of health services for those less fortunate. Physicians and dentists are finding fewer and fewer persons who can afford $1500 operations or $1000 dental bills. Thus there is reason to believe that our present system of supplying health services is rapidly becoming outdated.

Certainly the institution of a health service plan such as contemplated by the Beveridge Report would all but wipe out self-medication because few people would attempt to diagnose and treat their own illnesses if free medical attention and drugs were provided under an insurance plan. This, plus a concentration of prescription practice in the hands of a comparatively limited number of pharmacies or dispensaries, probably would constitute its principal effect on pharmacy.

There is much food for thought in the Beveridge Report, and pharmacists who are interested in "which way the wind is blowing" will find it worth while to obtain a copy of the published report (The Macmillan Company, New York, N. Y., price $1.00).

It is apparent that the post-war reconstruction period is going to provoke many problems affecting the lives and habits of the American people, not the least important of which will deal with the form and manner in which health services will be supplied.

A DENTIST-PHARMACIST DESIGNS A FEW DENTAL PHARMACEUTICALS

THIS GROUP OF PREPARATIONS, WHICH HAVE BEEN DISCUSSED IN THE A.D.A. JOURNAL, OFFER PHARMACISTS AN EXCEPTIONAL OPPORTUNITY TO DEVELOP FURTHER THEIR SERVICES TO DENTISTS

DR. J. Lewis Blass, who is a pharmacist as well as a dentist, and is Assistant Professor of Periodontia at the College of Dentistry of New York University, presents several new dental formulas in the *Journal of the American Dental Association* (30:3, 267–273, 1943) for preparations useful in the treatment of various types of periodontal disease.

TOPICAL ANESTHETIC

Dr. Blass suggests the following formula for a topical anesthetic:

Benzocaine	7.5
Oil of peppermint	6.0
Phenol crystals	3.5
Ethylene glycol, *q. s.*	50.0

The benzocaine, oil of peppermint, and phenol crystals are mixed in a flask and heated until the benzocaine dissolves, and sufficient ethylene glycol is added to make 50 cc.

Benzocaine acts by depressing the sensory nerve endings. The phenol and oil of peppermint aid in dissolving the benzocaine and enhance its penetration and anesthetic action. The vehicle is nonirritating and makes contact with the membranes in the presence of saliva.

The preparation is used in subgingival curettage and in the relief of gingival pain from toothbrush abrasion or following extensive instrumentation. It may be prescribed for the patient to use at home, with directions to apply it with a cotton pledget every 3 or 4 hours.

PUMICE-BENTONITE PASTE

Pumice flour is used by dentists for cleaning and polishing teeth. Dr. Blass suggests the addition of bentonite which, he states, makes a colloidal suspension of the preparation when mixed with water. Calcium carbonate is also added to aid in polishing, oil of cinnamon and oil of peppermint are used to flavor the product, and amaranth is used to give it a pink color. The complete formula is as follows:

Saccharin, soluble	0.25
Bentonite	13.00
Oil of cinnamon	0.25
Oil of peppermint	1.50
Calcium carbonate, U. S. P.	20.00
Sol. amaranth, 10%	1.00
Pumice flour	64.00

Mix, make a powder and place in No. 000 capsules.

The dentist empties the powder from one capsule into a dappan dish and adds as much water as can be held by the cap of the capsule. The paste is applied with a porte-polisher or rubber polishing cup.

SALT-LIME DENTIFRICE

Dr. Blass suggests the following salt and lime dentrifrice for massage brushing and as a mouthwash for sensitive mucous membranes:

Menthol	
Saccharin, *aa*	0.6
Calcium oxide	12.0
Methyl salicylate	2.0
Sodium chloride, fine	500.0

Sig.: One-third teaspoonful in a glassful of water as a mouthwash-dentifrice.

The dentifrice makes a sweet, pleasantly flavored solution. The lime water acts as an antacid and is mildly astringent. The saline solution cleanses mucous membranes without irritation.

The use of this preparation in too high a concentration may irritate mucous membranes. To relieve the effects of such irritation, a mouthwash made by mixing one teaspoonful of hydrogen peroxide in one-half glass of water is recommended.

SODIUM OLEATE DENTIFRICE

A sodium oleate dentifrice is believed to leave a film of sodium oleate on the tooth surface. The film is broken down by saliva and leaves a thin coating of oleic acid on the teeth. Such a dentifrice is useful in cases of toothbrush abrasion, when special protection of the tooth surface against acid attack is desired, or in cases of great susceptibility to dental caries. Dr. Blass suggests the following formula for such a dentifrice:

Sodium oleate	6.0
Saccharin	0.2
Oil of clove	1.0
Oil of cassia	0.5
Oil of peppermint	0.5
Alcohol	50.0
Glycerin	25.0
Water, *q. s.*	100.0

Sig.: Use 10 drops full strength on a dry brush as a dentifrice.

EPITHELIAL SOLVENT

Epithelial tissue sometimes interferes with pocket healing and a caustic solution is useful to dissolve it, permit its removal and stimulate connective tissue growth. Dr. Blass uses the following formula, which was introduced by J. O. McCall, for such a solution:

Sodium sulfide	70 grains
Sodium carbonate, 1 H_2O	20 grains
Water, *q. s.*	1 ounce

The solution is applied on a twist of cotton or bibulous paper, carried into the pocket with a smooth broach or with a No. 17 explorer, the point of which has been broken. The mouth is rinsed, and, after three minutes, the solution is withdrawn, and a second application made and continued for seven minutes. A curet is used to remove the disintegrated epithelium and the tissue is pressed lightly to contact the tooth root and

held so for five minutes to allow clotting. The patient is instructed to avoid brushing the area for three or four days. The treatment is repeated in seven to ten days if the pocket has not closed.

No cotton rolls are used for the solution is caustic on prolonged contact with soft tissues, and the area and the entire mouth are washed or sprayed well after the solution is applied.

PERIODONTAL VARNISH

After subgingival curettage it is sometimes desirable to use a varnish to protect the tissues within the pocket. For this purpose, Dr. Blass suggests the following formula:

Gum copal	16.0
Gum mastic	16.0
Tincture of myrrh	20.0
Ether	20.0
Collodion	40.0

Dispense the solution in 8-cc. homeopathic vials.

The gums, resins and collodion in this solution are precipitated by water and form a sticky seal which will remain in place for at least 24 hours.

The area in which it is to be used is isolated with cotton rolls, dried and the varnish applied with a cotton swab. The area is allowed to dry for one minute and a cotton swab soaked in water is then applied. The precipitate is patted into place with the wet swab.

TANNIC ACID ASTRINGENT

In localized or generalized hypertrophy accompanied by edema, dentists often use an astringent solution. For this purpose, Dr. Blass recommends the following:

Tannic acid	30.
Glycerin	30.

Place the ingredients in a bottle and heat on a water bath until the tannic acid is dissolved.

Tannic acid is an astringent, acting through its ability to precipitate proteins, and glycerin aids in the withdrawal of water from tissue cells.

Dentists use this solution by applying it under the tissue flap on a rope of lens paper. It is allowed to remain for ten minutes and is followed with a mouthwash of $2^1/_2$ teaspoonfuls of salt dissolved in a glass of water. The patient is told to use the mouthwash every two hours for three or four days. One application of the tannic acid solution is usually sufficient but, if necessary, a second application may be made in one week.

MOUTHWASHES FOR NECROTIC GINGIVITIS

In the treatment of necrotic gingivitis, the continued use of a mouthwash capable of liberating oxygen is essential. Sodium perborate has been extensively used for this purpose, but it has proved to be a frequent source of irritation to oral tissues and Dr. Blass prefers either hydrogen peroxide or zinc peroxide.

If hydrogen peroxide is used, the patient is instructed to add one teaspoonful to a half glassful of water and use as a mouthwash every hour, or less frequently, as required. Even the use of hydrogen peroxide should be restricted to the active stage of the disease, because prolonged use may produce irritation.

Zinc peroxide is applied to the gums as a paste, prepared with distilled water.

BEW NEEDS LAB EQUIPMENT

The following types of used laboratory equipment are urgently needed by the Board of Economic Warfare for its experimental laboratories abroad.

1. Polarimeters.
2. Analytical balances with weights sensitive to $^1/_{26}$ mgm.
3. Electric ovens thermostatic control 1° to 140° C.
4. Soxhlet extractors 127 x 43 mm.
5. Laboratory grinding mills, Wiley type.

If you can spare any of the above listed items, please send full description including make and catalogue numbers to.

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Board of Economic Warfare
Office of Imports
Washington, D. C.

A GROUP OF FORMULAS REFERRED TO IN RECENT ARTICLES IN MEDICAL JOURNALS... FORMULAS YOU SHOULD HAVE AT HAND FOR PRESCRIPTION USE

PHYSICIANS, reading clinical reports in leading medical journals of the country, find references to a number of preparations with which they are unfamiliar but which they may wish to prescribe. Many of the preparations are referred to by the name of the individual who first reported their use in the literature, while others bear no designation other than a therapeutically descriptive title. The formulas for these preparations are not found in such formularies as are in general use, most of them being too new for such compendia, and unless an individual has access to a large number of medical journals, he is at a loss to supply the particular preparation.

To bridge this gap, THIS JOURNAL endeavors to provide pharmacists with a record of various new formulas as they appear from time to time in the medical literature.

KISSMEYER SCABIES LOTION

Soft soap
Isopropyl alcohol
Benzyl benzoate, *aa q. s.*
M. Ft. Lotio

The patient is given a 15-minute bath with vigorous soaping and scrubbing in hot water, followed immediately, while the subject is still wet, by an application of the lotion from neck to feet, using a 3-inch stiff brush. This coating is permitted to dry and a second brushing is applied within 5 to 15 minutes. For 24 hours the patient is not allowed to wash his hands. At the end of the 24-hour period a second bath is given. Such rare cases of dermatitis as develop are readily controlled by calamine lotion.

Described by Maj. M. H. Saffron, Medical Corps, U. S. Army, as an anti-scabetic treatment which is meeting with growing approval abroad. (*Mil. Surg.*, 91: 5 (Nov., 1942), 560.)

PREHN'S FOOT POWDER

Salicylic acid, powdered	5
Menthol, powdered	2
Camphor, powdered	8
Boric acid, powdered	50
Starch	35

M. Ft. Pulv.

Described as useful in the treatment of fungous infections of the feet by Maj. M. H. Saffron, Medical Corps, U. S. Army. (*Mil. Surg.*, 91: 5 (Nov., 1942), 563.)

EMULSION OF SULFATHIAZOLE

Montreal General Hospital Formula

Sulfathiazole, finely powdered	5
Triethanolamine	2
Distilled water	24
White beeswax	5
Liquid paraffin	64

Described by Drs. F. B. Gurd, D. Ackman, J. W. Gerrie and J. E. Pritcherd, of the Montreal General Hospital and McGill University, in the treatment of burns. (*Annals of Surg.*, 116: 5 (Nov., 1942), 641.)

HOSPITAL PHARMACISTS OPEN CHARTER MEMBERSHIP DRIVE

FOR a limited time, the American Society of Hospital Pharmacists is offering individuals who can meet their requirements the opportunity to become charter members in this newly formed organization. Since the new society is an outgrowth of the Sub-Section on Hospital Pharmacy o the AMERICAN PHARMACEUTICAL ASSOCIATION, its officers wish particularly to give every hospital pharmacist who has been active in A. PH. A. work the privilege of charter membership, but any hospital pharmacist is eligible if he joins the A. PH. A. simultaneously.

H. A. K. Whitney, Chief Pharmacist of University Hospital, Ann Arbor, Mich., has issued the following call to the hospital pharmacists of the country.

'Emergencies create need.

"Needs, in turn, call for the best in trained personnel and materials with which to meet these needs. It is, undoubtedly safe to state that, with very few exceptions, more demands are being made of pharmacists today than at any time in recent history. And all of us are very much aware that these demands are having to be met in the face of serious shortages of personnel and supplies. The present world-wide struggle has emphasized most emphatically the professional aspects of pharmaceutical service. In such a critical time as this fate has decreed that the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS *must be launched!*

"The following is the list of officers of the American Society of Hospital Pharmacists and Committee Chairmen appointed to date.

Chairman: H. A. K. Whitney, University Hospital, Ann Arbor, Mich.

Vice-Chairman: Donald A. Clarke, The

APPLICATION FOR MEMBERSHIP
IN THE

American Pharmaceutical Association

Approving the objects of the American Pharmaceutical Association, I hereby apply for membership in the Association and subscribe for the "Journal of the American Pharmaceutical Association." I enclose $ for my membership dues and subscription.

Check which you desire:

- ☐ **Membership with the PRACTICAL PHARMACY EDITION, at $5.00.**
- ☐ **Membership with the SCIENTIFIC EDITION, at $6.00.**
- ☐ **Membership with BOTH EDITIONS, at $7.00.**

Name in Full _____

(Print name in full—Initials are not sufficient)

Number and Street _____

Date _____ **Town** _____ **State** _____

Paid $ _____ **No.** _____

This application with the first year's payment may be sent to the Chairman of the Membership Committee, the Secretary or any officer of the A. Ph. A.

E. F. KELLY, Secretary,
2215 Constitution Ave.,
Washington, D. C.

New York Hospital, 525 East 6th St., New York, N. Y.

Secretary: Hazel E. Landeen, Christian R. Holmes Hospital, University of Cincinnati, Cincinnati, Ohio.

Chairman of the Membership Committee: Lt. R. H. Stimson, M.A.C., Station Hospital, Fort Bragg, N. C.; *Acting Chairman:* Hazel E. Landeen.

Chairman, Minimum Standards Committee: Donald A. Clarke.

"You are urged to accept as your obligation any appointments and responsibilities which may be requested. Inquiries and suggestions are invited.

"In Union there is strength.

"Unity and organization will place us in the position we deserve, to meet not only the present problems but also the immense problems that are bound to present themselves in post-war planning—problems that will involve the heart and soul of our profession."

If you are a member of the AMERICAN PHARMACEUTICAL ASSOCIATION you need to fill out and send only the application blank on this page. If you are not a member of the A. PH. A., you must fill out and send both application blanks.

APPLICATION FOR CHARTER MEMBERSHIP

American Society of Hospital Pharmacists

Approving of its objects, I hereby apply for membership in the American Society of Hospital Pharmacists and enclose $3.00 as the annual fee for the current year. I also enclose an application for membership in the American Pharmaceutical Association together with $5.00. It is understood I shall receive all the benefits described in such application. In lieu of the enclosure of a membership application in the American Pharmaceutical Association, I submit a statement of affirmation of membership therein together with application for membership in the American Society of Hospital Pharmacists.

Name in full.....

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Graduate of.....**Year**.....**Degree**.....

Registered as.....**Year**.....**License No.**.....

Where employed.....**Address**.....

Capacity in which employed.....**No. of Years**.....

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HAZEL E. LANDEEN, Secretary
Christian R. Holmes Hospital, Cincinnati, Ohio

Druggists Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

EMULSION-TYPE BASE BEST FOR SALICYLIC ACID OINTMENTS

Saliclic acid produces a keratolytic effect in a shorter time when it is applied in an emulsion-type ointment base than when it is used in a petrolatum base on a zinc paste, according to E. A. Strakosch, M.D., of the Division of Dermatology and Syphilology of the University of Minnesota, in a thesis submitted to the faculty of the Graduate School of that institution in partial fulfillment of the requirements for the degree of Master of Science in Dermatology and Syphilology.

Dr. Strakosch investigated salicylic acid ointments prepared with the following bases:

1. Petrolatum
2. Equal parts of petrolatum and hydrous wool fat
3. Aquaphor (Duke)
4. Hydrosorb (Abbott)
5. Stearyl alcohol..... 10 Gm.
   Liquid petrolatum..... 10 cc.
   Water..... 10 cc.
   Petrolatum..... 70 Gm.
6. Zinc oxide..... 7.5 Gm.
   Talc..... 7.5 Gm.
   Petrolatum, *q. s.*..... 30.0 Gm.

He first prepared 1 per cent ointments, placed 0.5 Gm. of each between 2 strips of filter paper and immersed them in small beakers containing equal amounts of a 1 per cent solution of iron chloride. The liberation of salicylic acid was judged by the degree of violet discoloration of the various solutions after 12 hours at room temperature. Ointment bases 3, 4 and 5 liberated the salicylic acid most freely.

Ointments of 1, 3, 5, 10 and 15 per cent salicylic acid were prepared in the 6 bases, and 0.5 Gm. of each sample was slightly rubbed into areas 2 x 2 inches of the skin of the thighs and abdomen 3 times daily, each individual test being repeated 4 times on a different subject. Specimens for biopsy were taken after 24, 48 and 72 hours, and 7, 10 and 14 days. Dr. Strakosch found that the keratolytic effect of the ointments paralleled the liberation of the salicylic acid from the various bases, the most rapid effect being obtained from ointments in bases 3, 4 and 5.

Increasing the concentration of salicylic acid in the ointments speeded up the keratolytic effect, but not in regular proportion. A 1 per cent ointment in base 2, for example, caused keratolysis in 10 days, a 3 per cent ointment produced the same effect in 8 days, and increasing the concentration from 3 to 5 per cent further shortened the time, and when the concentration was increased from 5 to 10 per cent, the time was reduced, not to half but to approximately one-third. Increasing the concentration above 10 per cent causes little difference in keratolytic effect; 10 and 15 per cent concentrations giving, for practical purposes, identical results

Although emulsion-type bases were best for salicylic acid ointments, there was little difference between oil-in-water and water-in-oil vehicles.

Arch. Derm. & Syphil., 1: 47 (Jan., 1943), 16–26

DOSAGE OF VITAMIN D

Premature infants weighing less than 5½ pounds need 1400 International Units of vitamin D a day; normal infants, children under 5 years of age, pregnant women and nursing mothers require 700 units a day; and school children require 3500 units per week, according to a committee of the British Pædiatric Association which has been studying the subject.

The committee has recommended the use of a vitaminized oil reinforced with irradiated ergosterol which would contain 700 units of vitamin D and 3500 units of vitamin A per dram (3.7 cc.).

It further recommends that a booklet covering the following points of instructions be prepared for mothers:

(1) Start giving the oil gradually, a few drops daily, when the infant is 1 month old, and take a fortnight to work up to one teaspoonful.

(2) If the baby's birth-weight was over 5½ pounds, the vitaminized oil need not be given on summer days if the infant is out-of-doors in the morning and afternoon.

(3) Premature infants should receive double the normal dose, divided into four portions of ½ dram each.

The committee states that the amount of vitamin D which a child obtains from food is subject to such variation and, in any case, is so minute that it can be ignored.

—*Am. J. of Dis. of Children, 65: 1, 158–161*

TWO FORMS OF A NON-GREASY WASHABLE OINTMENT BASE

Jack Pavone, pharmacist of the New York State Institute for the Study of Malignant Diseases, Buffalo, in a communication to THIS JOURNAL describes two types of a washable ointment base of the same general formula developed at the hospital for the application of medicinal substances such as menthol, procaine hydrochloride and sulfonamide drugs to dermal areas which have become extremely sensitive as a result of X-ray treatment. The two forms, one known as a nongreasy cream and the other as an emulsifier, have the following formula:

	CREAM	EMULSIFIER
Sodium lauryl sulfonate	50.0	5.0
Cetyl alcohol	125.0	12.5
Triethanolamine	125.0	5.0
White petrolatum	250.0	...
Stearic acid	...	11.0
Cocoa butter	100.0	10.0
Distilled water	800.0	125.0

Cream: Melt the sodium lauryl sulfonate and cetyl alcohol on a water bath, heat for ½ hour with constant stirring. Add the triethanolamine and stir, then add the petrolatum and stir for 15 minutes. Add the distilled water in small portions with constant stirring until a homogeneous mixture results. Add the cocoa butter and stir until it liquifies and is thoroughly mixed with the other ingredients. Remove from the water bath and immerse the container in cold water. Stir vigorously until a smooth, white cream. The faster the mixture is stirred the smoother and whiter the cream. The cream will absorb up to 60 per cent of water and retain a firm consistency.

Emulsifier: Melt the sodium lauryl sulfonate, cetyl alcohol and cocoa butter on a water bath. Add the stearic acid and stir until liquified. Mix the triethanolamine and water in a graduate and add to the liquefied mixture in small quantities with constant stirring. When thoroughly mixed, remove from the water bath, immerse the container in cold water and stir until the mixture congeals.

The following formulas illustrate the use of these two bases:

SULFATHI-UREA CREAM

Sulfathiazole	5.0
Urea	10.0
Chlorbutanol	0.1
Distilled water	25.0
Nongreasy cream, *q. s.*	100.0

The urea is dissolved in the water and filtered. The sulfathiazole and chlorbutanol are triturated in a dry mortar and enough of the urea solution added in small portions to make a paste. Add about 30 Gm. of the nongreasy cream and triturate until smooth. Add the balance of the urea solution, triturate and add enough nongreasy cream to make 100 Gm. Triturate to a smooth cream. Do not use metal utensils in preparing or storing.

This preparation is used in the treatment of burns, as a postoperative dressing, and in the treatment of necrotic areas and streptococcic and staphylococcic infections. It may be made with 10 per cent of sulfathiazole, with or without the urea. Sulfanilamide or sulfadiazine may be used in place of the sulfathiazole.

SULFATHIAZOLE SUSPENSION

Sulfathiazole	5.0
Chlorbutanol	0.2
Distilled water	35.0
Emulsifier, *q. s.*	100.0

Triturate the sulfathiazole and chlorobutanol in a dry mortar and sufficient water in small portions to make a smooth paste. Add about 30 Gm. of the emulsifier, triturate well, add the balance of the water and triturate. Add sufficient emulsifier to make 100 Gm. and triturate well.

SULFAPYRIDINE AS A HEMOSTATIC AGENT

The problem of controlling tonsillar bleeding, secondary hemorrhages which often occur from 1 to 14 days after an operation for the removal of tonsils, has long been a worry to surgeons, for many cases are of the slow, oozing type which defy routine measures.

Then, early in 1940 orthopedic surgeons using sulfamethylthiazole powder locally in the treatment of osteomyelitis of frontal bones found that there was no postoperative oozing, and that gave Dr. Bernard P. Cunningham, of the Mayo Clinic, an idea. He tested the various sulfa drugs on guinea pigs with back wounds and found that, although sulfanilamide and sulfathiazole were ineffective, after spraying with sulfapyridine the surface of the wound became dry and covered with a thin, tenacious coating of the drug which could not be easily dislodged. To rule out the possibility that the hemostatic effect was due merely to the physical properties of the fine powder, he tried spraying wounds with talc, but it was ineffective.

He repeated his experiments on horses with like results. He also tried a 40 per cent solution of sodium sulfapyridine and found the wound dried up in 3 to 5 minutes, a silver-appearing precipitate apparently covering the base of the wound. Since the solution used had a *p*H of 11, he repeated the tests with a $^1/_{10}$ Normal solution of sodium hydroxide as a control, but it was ineffective.

For clinical study, Dr. Cunningham selected seven of the most difficult cases of tonsillar bleeding that were presented at Worrall Hospital, Rochester, Minn., over a period of 18 months. All were of the slow, oozing type which had resisted routine methods of treatment. In every case the treatment with sulfapyridine powder was successful.

Dr. Cunningham believes that sulfapyridine is a simple, safe and effective therapeutic agent for local application to the tonsillar fossa in the control of secondary tonsillar hemorrhage not amenable to routine management and he suggests the possibility that its regular use may prevent the occurrence of such hemorrhages.

In spraying sulfapyridine powder on the tonsillar area, the patient is instructed to hold his breath to avoid coughing.

—*Ann. Otol., Rhin., and Laryng, 51:2, 301–316*

ASPIRIN-ACETIC ACID SOLUTION FOR RINGWORM INFECTIONS

The application of a solution of 25 grains of acetylsalicylic acid (five 5-grain tablets) in one ounce of 4 per cent acetic acid (white chemical vinegar) is recommended in the treatment of ringworm infections of the skin by Dr. A. P. Hudgins, of Charleston, W. Va., in the November, 1942, issue of the *West Virginia Medical Journal* (38:11, 406–408).

The solution is applied frequently to the infected hands and feet, especially after using soap. Patients are instructed to keep an ample supply in the bathroom and kitchen so that it can be used regularly and frequently. If the infection is slow in healing, a piece of gauze or cotton may be saturated in the solution and held to the area with adhesive tape for several hours.

The solution is described as effective in disinfecting fungus-infected shoes. It is poured into the shoes once or twice a day until the foot infection is cleared up and then once every two or three days as a prophylactic. Dr. Hudgins states that this routine is about as effective as the more elaborate "fumigation" processes involving the exposure of shoes to formaldehyde vapors and says it leaves the shoes wearable.

Dr. Hudgins developed the acetylsalicylic acid-acetic acid solution originally for the treatment of ringworm infections of the female genitalia. Such cases are treated in the physician's office by ultraviolet ray therapy and with 2 per cent acetic acid on tampons. The solution is prescribed for home treatment and is used two to three times a day. Vinegar douches, 1 ounce of vinegar to 1 quart of water, are also prescribed.

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